

HEALTH DIAGNOSIS

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Plan

- Definitions of health
- Factors that determine health status
- Weight of different elements in conditioning health status
- Contemporary concept of health determinants
- Interdependence of health determinants
- Dialectical relationship between health and disease
- Causes of transition from health to disease
- The effects of risk factors.
- Stages of evolution from health to disease. The role of family doctor
- Importance of correct diagnosis of health status
- The family physician's role of in strengthening the public health

Definitions of health

- Health is a state of balance between body, mind and environment (Hippocrates)
- Evolution of health definitions over the past 100-150 years :
 - survival
 - disease free status
 - the ability to perform normal daily activities
 - the feeling of happiness and prosperity

Definitions of health

- "Health is a multidimensional concept that includes not only the absence of disease or disability, but also the ability to perform everyday tasks and activities and to keep the usual feeling of good condition"

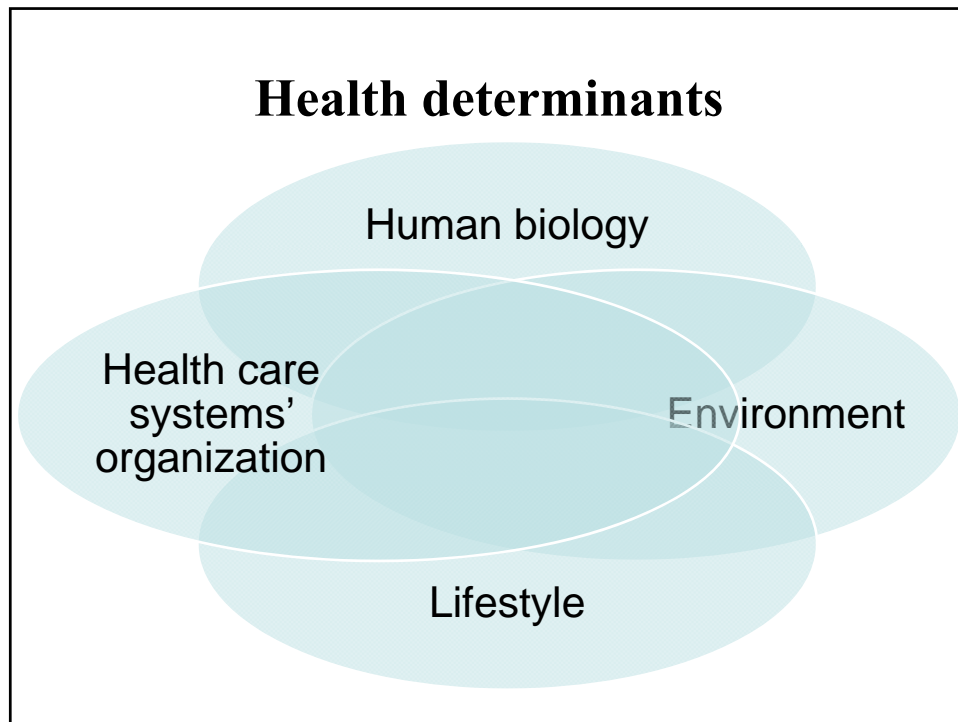
Five approaches in defining health

1. **The Medical** model is based on the perspective of disease, disease and appropriate functioning. This model claims that health of an individual or nation can be deduced from the seriousness of the illness / disease present in this entity.
2. **The Holistic** model includes the whole individual in his/her integrity, including physical, mental and social aspects.
3. **The Welfare** model is concerned with better than normal states, as well as subjective feelings of health.
4. **The Environment/ambience** model describes the individual's optimal interactions with the environment.
5. **The Eclectic** model includes the unusual definitions of health

Definition of health

„ Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”

(WHO. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June 1946, and entered into force on 7 April 1948.)



Human biology

Includes all the aspects of physical and mental health that occur in the human body as a result of biological processes and determine the individual's phenotype.

This includes:

- Heredity of the individual
- Processes of mutation and aging
- Multitude of complex systems within the body
 - Osteo-articular
 - Muscular
 - Nervous
 - Cardiovascular
 - Endocrine
 - Digestive, etc..

Individual characteristics that may influence the development and evolution of disease

Constitutional type	Endocrine type	Neuro-vegetative type
<ul style="list-style-type: none"> • Respiratory, digestive, muscular, cerebral • Leptosomic, athletic, picnic • Longiline, breviline 	<ul style="list-style-type: none"> • Hyper-or hypopituitary • Hyper or hypothyroid • Hyper or hypoparathroid • Hyper or hypoadrenal • Hyper or hypogonadal 	<ul style="list-style-type: none"> • Sympatricoton • Parasympatricoton • Anyfoton or autonomically labile

Individual characteristics that may influence the development and evolution of disease

Types Of personality	The importance of age	The importance of gender
<ul style="list-style-type: none"> • Sanguinic, phlegmatic, choleric, melancholic • Introvert, extrovert • Accentuated personalities • Psihopathoid personalities • psychosomatic personalities • Type A Of personality 	<ul style="list-style-type: none"> • Child specific Diseases • Diseases more common in children • Diseases specific for elderly • Diseases more common in elderly 	<ul style="list-style-type: none"> • Diseases specific for female • Diseases specific for male • Diseases more common in females • Diseases more common in men

The environment

The category "Environment" includes all the health related aspects (influences) which are outside the human body and on which the individual has little or no control.

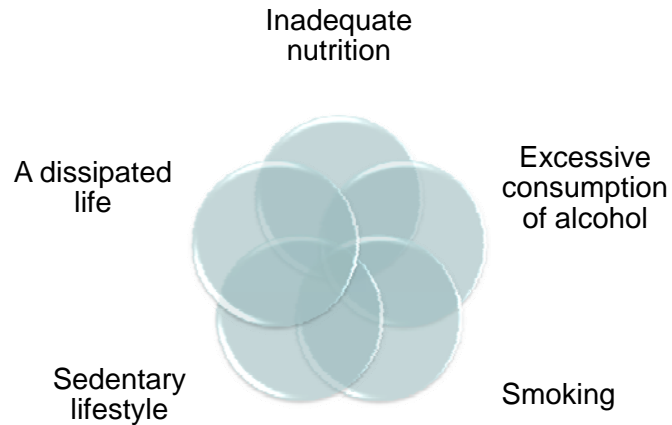
- Individuals by themselves can not ensure the situation
- Where food, drugs, cosmetics, appliances, water, etc. are uncontaminated and safe,
- Where the health hazards arising from the air, polluted water, noise, vibration are put under control,
- Where the spread of communicable diseases is prevented effectively,
- In which the correct waste of different origin collection and processing and
- The social environment, although fast changing, does not produce harmful effects on health.

Lifestyle

Category "lifestyle" consists of all decisions taken by individuals that affect their health and on which the individual possess a certain degree of control.

- Personal decisions, incorrect from a health perspective, create self-imposed risks.

Lifestyle elements that negatively influence health

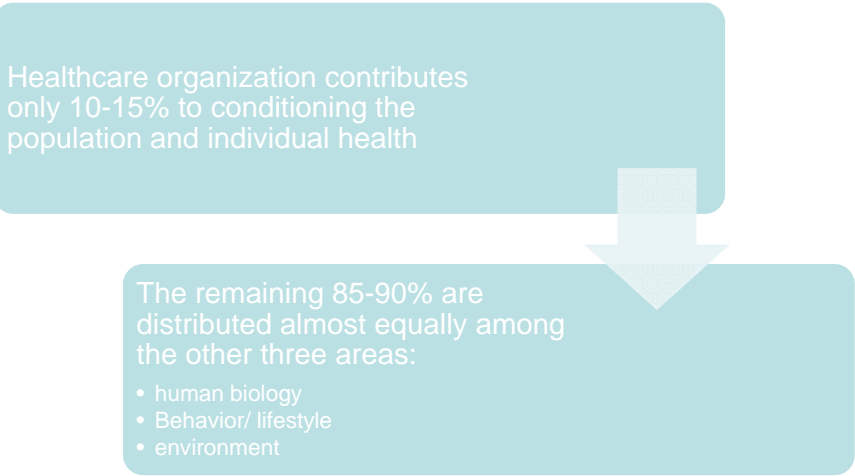


Organization of Healthcare

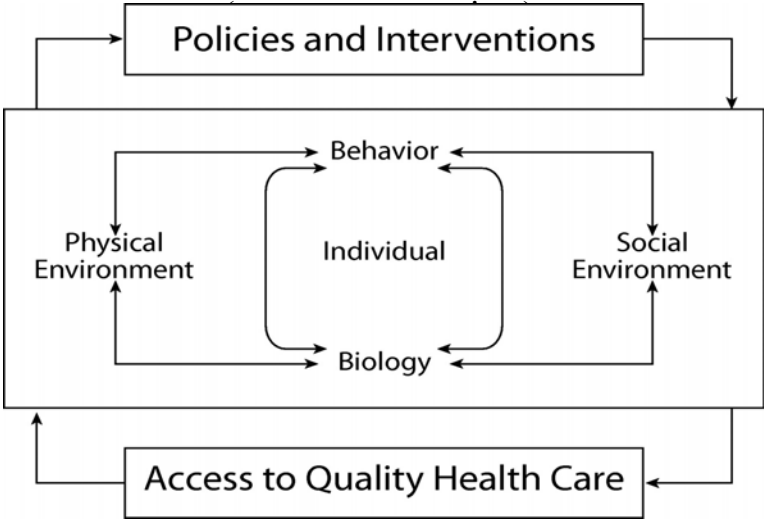
The category " Organization of Healthcare" implies quantity, quality, arrangement, and nature of relationships between people and resources in the health care systems.

- It includes
 - primary care institutions,
 - hospitals, medicines,
 - community health services,
 - emergency services,
 - dentistry and other medical services.
- This element is, in fact, hat is understood as health care system.

Shares of different elements in conditioning health



Determinants of health



Bortz, W. M. Am J Public Health 2005;95:389-392. Adapted from Healthy People 2010: Understanding and Improving Health.



Interdependence of health determinants

- Why John was admitted to hospital?
- He's got an infected wound on his leg.
- But where did he get the infection?
- He made a foot cut and it got infected.
- And where has he cut his foot?
- He played in the uncleaned yard before the stairs, where he lives, and there was some sharp metal waste and he had fallen over a sharp and rusty piece.
- Why did he play in the yard full of trash?

Interdependence of health determinants

(cont)

- Because the district sanitation does not work properly (the municipality has no money) and many children play unattended in the yards full of garbage.
- But why should they live in this district?
- His parents can not afford housing in a better district.
Why?
- His father does not work, and his mother is ill.
- But why John's father does not work?
- He Has not got a decent education and therefore can not find a decently paid work.
- But why ...?"

The dialectical relationships between health and disease (I)

- Biological factor
 - Diamond has studied "biological safety factors" in a large spectrum of biological creatures from squid to primates and noticed that the total functional capacity is related to the basal one as 10 to 1.3.
 - In humans, the capacities of functional reserves are better observed in the case of paired organs where the loss of one organ leads to insignificant total loss of total function.

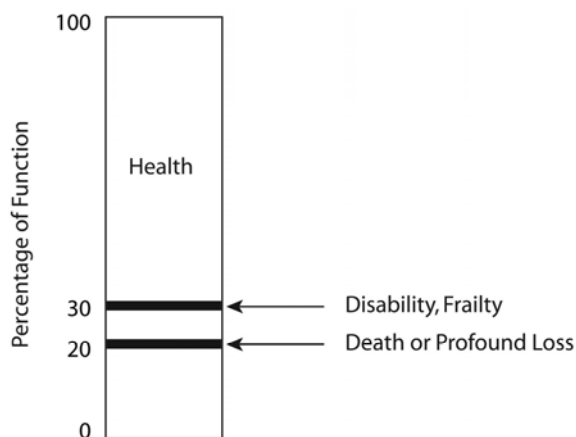
The dialectical relationships between health and disease (II)

- Many other capacities - cardiac reserve, oxygen transport, concentrations of neurotransmitter substances, muscle strength, lumen of vascular bed, creatinine clearance, liver mass, sensory and cognitive capabilities - have demonstrated similar safety reserves.
- A common implication, although not universal, is that the deterioration of health is symptomatic after the loss of approximately 70% of maximum functional capacity.

The dialectical relationships between health and disease (III)

- The area between 20 and 40% of maximum capacity is called by some scientists “the interval between disability and survival”.
- The World Health Organization suggests that the state of health should be considered until the appearance of evident health damage manifestations.
- This means that until the disease is in its identifiable phase, a substantial reserve potential is involved.

Space of health



Source. Adapted with permission from *The journals of Gerontology, Series A, Biological Sciences and Medical Sciences*

Read More: <http://ajph.aphapublications.org/doi/full/10.2105/AJPH.2003.033324>

Social determinants of health

- Social gradient
- Stress
- Development conditions in childhood
- Social isolation
- Workplace
- Unemployment
- Social support
- Substance abuse
- Nutrition
- Transportation

Social gradient

- Poor social and economic conditions affect health of individuals throughout their life.
- People who are at the bottom of social scale have the likelihood of serious disease and premature death at least double compared with individuals who are at the top of the social scale.
- Social gradient in health extends across society in a way that even within the limits of the same category, those located further down the social scale have more illness and premature deaths than those above

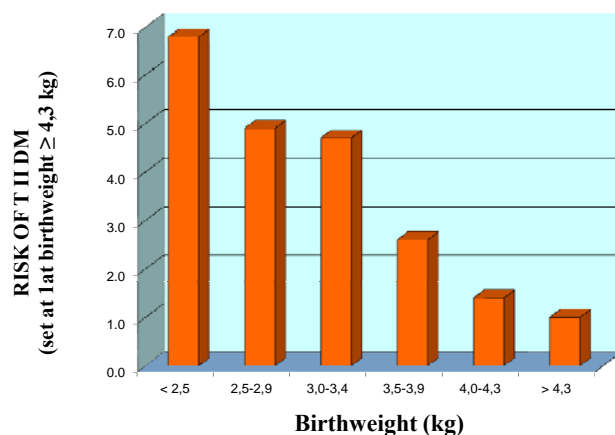
Stress

- What is known about stress?
 - Social and psychological circumstances may condition long-term stress.
 - Continues anxiety, insecurity, low self-esteem, social isolation, lack of control over work and home life have strong negative effects on health.
 - The action of psychosocial risks accumulates during the life and increases the likelihood of mental health problems and premature death.
 - Long periods of anxiety and uncertainty, lack of supportive relationships are devastating in any area of life .
 - The lower are the individuals in the social hierarchy, the more frequently health problems are encountered.

Development conditions in childhood

- Growth with retardation and insufficient emotional support raises the risk of poor physical health and insufficient, cognitive and emotional functioning in adulthood.
- Negative experiences in childhood and slow physical growth are incorporated in individual's biology during the development and form the basis of individual biological and human capital that affect health over the life.
- Adverse conditions during pregnancy can lead to suboptimal development of the fetus by a chain, which may include nutritional deficiencies during pregnancy, stress in pregnant women, them being more likely to smoke and abuse alcohol and drugs in pregnancy, insufficient exercise and inadequate parental care.

Risk of T2DM in males ≥ 64 y. o. depending on birth weight



Social isolation

- Life is short where its quality is poor.
- By conditioning the difficulties, antipathy hostility and poverty, social isolation and discrimination costs lives.
- Poverty, deprivation and social exclusion have a major impact on health and early mortality, and the chances of living in poverty are much higher in certain social groups.

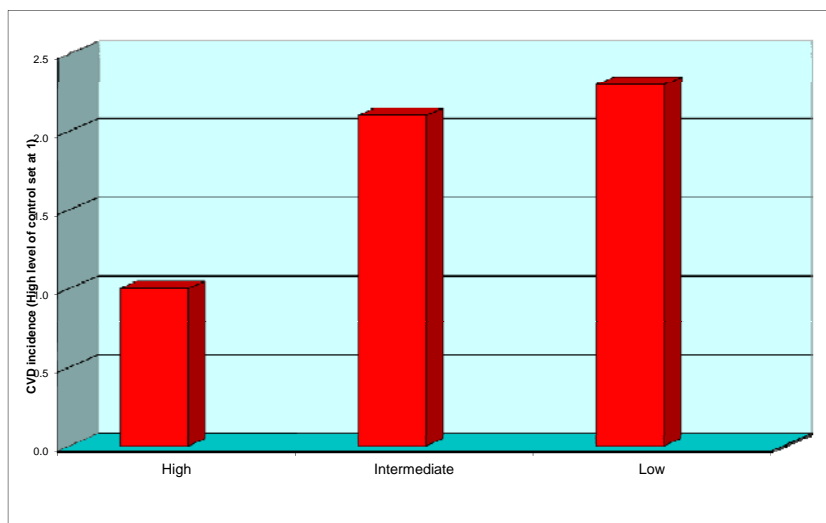
Social isolation

- Unemployed, ethnic minorities, people with disabilities, refugees, vagabonds are at increased risk. Vagabonds have the highest mortality rate
- The pressure of life in poverty is particularly harmful during pregnancy, childhood and old age.
- The longer the period of living in circumstances of poverty, the greater the likelihood of suffering from health problems, especially cardiovascular diseases.
- Poverty and social exclusion increase the risks of divorce and separation, disability and illness, substance addiction, social isolation and vice versa, forming vicious circles, which deepen the difficult situation in which the individual exists.

Workplace and work conditions

- Stress at work increases the risk of disease.
People who have a better control over the work, have better health.
- Social organization of work, management styles, social relationships at work - all are important to health.
- Stress at work contribute to differences in health, conditioned by social status, duration of stay on the sick leave and the death rate.
- A number of studies at the workplaces demonstrate that health suffers when people have little opportunities to apply the skills possessed and have low authority in decision making.
- Insufficient control over the own work is closely related to the incidence of back pain, duration of stay on the sick leave and cardiovascular diseases.

Level of control over the workplace activities and incidence of CVDs



Unemployment

- Higher levels of unemployment cause more illness and premature deaths.
- Unemployment puts health at risk and the risk is higher in regions where unemployment is more prevalent.
- Evidence from several countries demonstrate that even after adjusting for other factors, the unemployed and their families have higher levels of mortality.
- The effects of unemployment on health are related both to consequences of psychological and mental health effects (especially anxiety and depression) and cardiovascular disease and cardiovascular risk factors.

Social support

- People who have less emotional and social support from others more often fall ill, are often depressed, have higher risk of complications in pregnancy and advanced degrees of disability caused by chronic diseases.

Social support

- Bad relationships with relatives can lead to mental and somatic health problems.
- The volume of emotional and social support, which people enjoy, varies according to social and economic status.
- Social cohesion, defined as quality of social relations and existence of trust, mutual obligations and respect in the community or in society at large, helps to protect people and their health.
- Inequalities are destructive to good social relations.

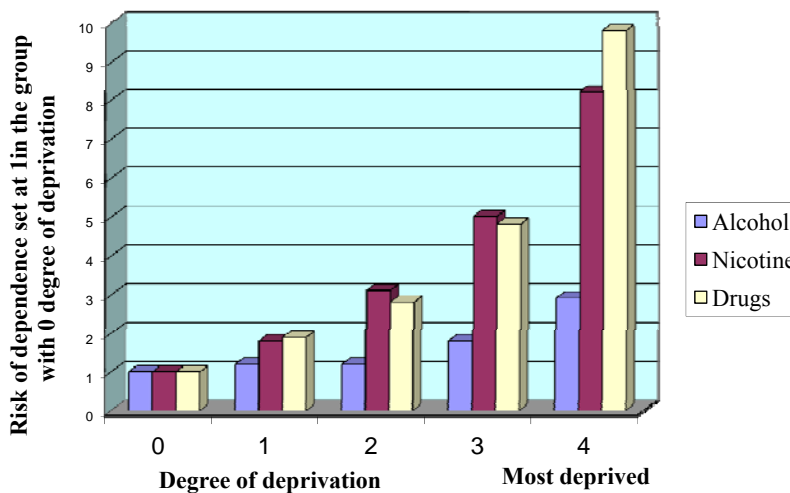
Social support

- Societies with high degrees of income inequality tend to have less social cohesion and more violent crimes.
- Higher degree of mutual support protects health where damaged social relations, sometimes followed by greater inequality, reduce trust and increase the degree of violence.
- A study of the community with high initial level of social cohesion showed low incidence of ischemic heart disease, while with diminishing social cohesion in time the incidence of heart disease has increased.

Substance abuse

- Individuals turn to alcohol, drugs and tobacco and suffer from their use, but this consumption is influenced by conditions and social circumstances.
- Drug use is both a response to social failures and an important factor in worsening health inequalities. It gives users the feeling of escape from the stress and difficulty, but make the problems even worse.
- Alcohol dependence, illicit drug use, smoking, - all these are closely associated with signs of social and economic disadvantage.

The degree of socioeconomic deprivation and risk of dependence on alcohol, nicotine and drugs



Nutrition

- Insufficiency of food and its reduced variety cause malnutrition and deficiency diseases
- Excessive consumption (as a form of malnutrition) contributes to cardiovascular illnesses, diabetes, cancer, degenerative eye disease, obesity and dental caries
- Food poverty exists along with food abundance
- An important health issue is the availability and cost of healthy foods.
- Access to quality food influences the character of nutrition more than healthy eating education.

Nutrition

- Economic growth, improving the living conditions and sanitation, have brought the epidemiological transition from infectious to chronic diseases, including ischemic heart disease, stroke and cancer.
- Nutritional transition occurred simultaneously and the character of nutrition has changed to excessive consumption of saturated fats and carbohydrates, leading to obesity. At the same time, obesity has become more widespread among the poor than among the rich.
- Social and economic conditions result in social gradient in the diet quality that contributes to inequalities in health.
- The biggest difference between social classes is the source of food nutrients. In several countries, the poor tend to consume processed cheaper foods, instead of fresh foods .

Transportation

- Healthy transportation means more walking and cycling, supplemented by a good public transport system.
- Walking or cycling and using public transport promote health in four ways:
 - provide exercise
 - reduce the number of fatal accidents
 - strengthen social contacts
 - reduce air pollution
- Transportation policy can play an important role in combating sedentary lifestyle by reducing use of private cars, promoting walking and using bicycles and development of public transportation
- Systematic exercise protects against cardiovascular disease and, by limiting obesity, reduces the installation of type II diabetes. They promote a sense of wellbeing and protect older people from depression

The causes of evolution from health to disease. The effects of risk factors.

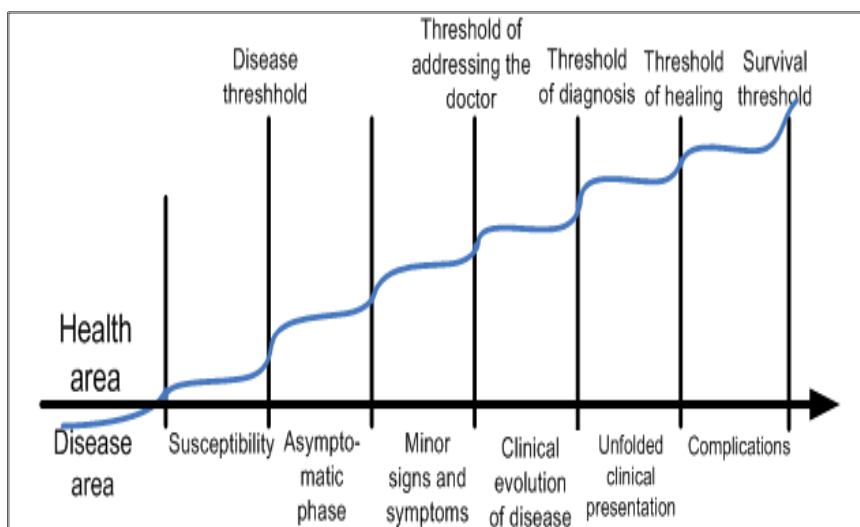
- The causes of the causes of transition from health to disease
 - Children with malnutrition, or incorrectly fed easily acquire diseases and die.
 - Housing and communities without water and sanitation cause guaranteed fertile environment for intestinal infections.
 - Lack of gas supply and district heating results in pollution of air resulting in pulmonary diseases.
 - Hopelessness pushes young women to commercial sex and violence with inherent risks of sexually transmitted infections, including HIV / AIDS, and injuries
 - Manufacturers of tobacco and alcohol get enormous profits from advertising and promotion, leading to the spread of addiction.
 - The traffic growth results in increased dramatization.
- It is therefore clear message that health risk factors are found both in human biology, the environment, and lifestyle.

Percentage of illness and death attributed to the action of some risk factors

Risk factor	Percent of diseases	Percent of deaths
Smoking	4,7	8,5
Indoor air pollution	2,7	3,2
Lack of quality water and sanitation	3,4	2,8
Unprotected sex	5,3	5,1

- Closer underlying causes are broader health determinants, such as education and, to a lesser extent, the level of income.
- The effects of income and education levels are manifested in most cases by influencing the risk (and allowing efficient use of health services).
- There is a substantial proportion of compromised health resulting from poverty and low level of education, or their consequences - inadequate nutrition, poor sanitary situation, or other specific risks
- Then one of the tasks of the family doctor is to explore these areas and to take appropriate educational and preventive measures.

Stages of evolution from health to disease



Diagnosis of degrees and forms of health

The degree of health	The degree of disease	Elements of diagnosis
Ideal health	Absent	Absence of morbid signs Absence of risk factors Presence of positive signs High vigor and resistance
Complete health	Absent	Absence of morbid signs Absence of risk factors Normal clinical & paraclinical data Presence of positive signs
Satisfactory health	Susceptibility	Presence of risk factors Absence of morbid signs Normal clinical & paraclinical data
Questionable health	Preclinical	Presence of risk factors Vague signs of disease Clinical & paraclinical data at the limit of normal
Undermined health	Initial	Presence of risk factors Signs of debut present Minimal biological changes
Compromised health	Manifest	Presence of risk factors Presence of clinical and biological signs characteristic for the disease
		Irreversible lesions

The importance of correct diagnosis of health

- Comprehensive (multidimensional) diagnosis of health status, which takes into account biological, mental, behavioral, social and environmental aspects, allows the family physician to elucidate the healthy individual's problems that can potentially adversely affect his/her health, to plan and organize appropriate interventions for health promotion and disease prevention at the individual, family and community levels.

The importance of correct diagnosis of health

- Given that health is linked closely and dialectically with the seriousness and extent of the disease present in the patient, correct diagnosis of poor health serves as basis for the assessment of functional status, and therefore allows the family physician to determine the indications for temporary work incapacity, or the need to refer the patient to medical expert commission of vitality (CMEV) with the aim of determining the degree of disability.

The importance of correct diagnosis of health

- Correct diagnosis of health in its relations with the needs of the patient coming from risks of disease spectrum and seriousness of the patient, allows the family physician to mobilize and coordinate the necessary health resources of the system and community and to preserve the remaining health potential of the ill individual.

Criteria used to diagnose the health status

Criteria	Observations
Negative	Absence of clinically manifest diseases Absence of diseases with evolution in crises or relapses Absence of asymptomatic disease Absence of risk factors
Positive	Normal morphologic development Normal organ functioning Normal behavior Vigor & adaptability
Statistical	Framing the parameters within statistical limits Compliance with the rules of behavior

The role of family physician in strengthening health of the population served

- The individual level
The family doctor, by his specific position in the health system and community, is able to influence all areas that determine the health of the individual and the community.

The role of family physician in strengthening health of the population served

- Human biology is yet influenced in premarital stage and preconceptional visits (family planning). Interventions in this area continue during pregnancy as well (eq.: Iron and folic acid supplements given to pregnant women).

The role of family physician in strengthening health of the population served

- Life style
- Virtually every patient exam includes the element of annual review and the assessment of risk factors, including important behavioral and lifestyle factors:
 - Character of food;
 - Smoking;
 - Alcohol abuse;
 - Intensity and duration of exercise daily;
 - Seat belt use in cars, etc..
- The family doctor will take behavior modification interventions to reduce epy risks from patient's perilous lifestyle and health behavior

The role of family physician in strengthening health of the population served

- **Environmental factors**, as well can be influenced by family doctor.

One of the aims of home visits is assessment of physical and psychological environment and the degree of family support.

It is natural that after estimating risks to the patient, family doctor will advise family members to eliminate them. (For example.: Mold, or food for aquarium fishes in the apartment where a child with asthma lives.)

The role of family physician in strengthening health of the population served

- At the Community level, the family doctor plays three key roles in health. This is more evident for rural communities:
- **Leader.** In several cases the family doctor take a leading role in solving community health problems, analyzing their prevalence, causes and knowing the ways of more rational settlement of them.

The role of family physician in strengthening
health of the population served

- At the Community level
- Person of influence. The family doctor is a person endowed with knowledge of public health and plays a role of catalyst, facilitator and organizer of the collaboration between different sectors of the community in health problem solving (eq.: Health problems of children require the involvement of public education sector, local public administration, consultants and specialists, and the family physician).

The role of family physician in strengthening
health of the population served

- At the Community level

Communicator. The family doctor will communicate with the public and community leaders on the impact of decisions made on the community health.